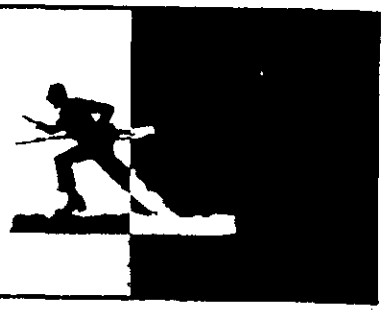
# TRAINING NOTES



# ITV Gunnery Training

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For too long now, TOW training has emphasized the use of the M70 trainer to develop tracking skills. This emphasis stems from the fact that the M70 generates a numerical score, and some believe that this can be used to separate good TOW gunners from bad ones.

In April 1984 the Infantry School distributed FC 23-34, Interim TOW Training Plan, which cited two independent studies conducted on the TOW weapon system and the state of training at that time. Both tests revealed that there was no direct correlation between M70 scores and live missile hits, and that gunnery conditions with the M70 were unrealistic. Following the publication of FC 23-34, units began taking steps to improve the overall training for their TOW crews by concentrating on integrating tracking and missile gunnery training into tactical training.

Unfortunately, subsequent training publications issued by the Infantry School have failed to follow up this concept. The tasks listed in FM 23-24 (Test) and FM 23-34, for example, read more like tactical tables than integrated tactical and tracking training.

The 1st Battalion, 36th Infantry, 3d Armored Division, has designed a new training program to improve the technical proficiency and tactical gunnery skills of its M901A1 ITV crewmen from individual through platoon level. This program is a drastic departure from the previous training plans for TOW crews.

Under this new concept, the focus of the battalion's ITV gunnery program is two-fold: First, it is aimed at training and sustaining the technical proficiency and tactical gunnery skills of individuals, crews, and platoons. Second, it establishes standards under which individual through platoon level gunnery can be evaluated periodically and systematically.

To achieve its first goal, the program uses the crawl, walk, run method. Each gunnery table requires the use of different skills or an increased level of difficulty in the skills already developed. Each table builds upon the previous one.

The progressive levels of the program are basic, intermediate, and advanced. Thus, Tables I through V are used for training basic gunnery techniques and engagements; Tables VI through VIII for intermediate gunnery; and Tables IX through XIII for advanced gunnery. Tables V and VIII are the "gate tables" that allow progression to the next level of gunnery. (See accompanying list of tables.)

The ITV tables were patterned after the Bradley gunnery tables. In a division equipped with M1 Abrams tanks and M2/M3 Bradley fighting vehicles, therefore, this allows all the combat vehicle commanders to speak the same language. Table VIII is used for vehicle and crew qualification for the tanks, Bradleys, and ITVs, and Tables X and XII for section and platoon qualification.

The second objective of the program—

**ITV GUNNERY TABLES**

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| Table I | Ground Mount MILES Range (Practice) |
| Table II | Ground Mount MILES Range (Qualification) |
| Table III | Gunner's Hand Control Manipulation and Range Card |
| Table IV | ITV MILES Range (Practice) |
| Table V | ITV MILES Range (Qualification) |
| Table VI | ITV Crew/Squad Base-line Exercise |
| Table VII | ITV Crew/Squad Combat Course (Practice) |
| Table VIII | ITV Crew/Squad Combat Course (Qualification) |
| Table IX | ITV Section Combat Course (Practice) |
| Table X | ITV Section Combat Course (Qualification) |
| Table XI | ITV Platoon Combat Course (Practice) |
| Table XII | ITV Platoon Combat Course (Qualification) |

Improved TOW vehicle equipped with MILES fires at a target down range during training.

to evaluate individual through platoon level gunnery—is easily achieved through the task, condition, and standard established by each table and firing task. Categories of qualification have been outlined so that commanders can assess the gunnery proficiency of their gunners and crews.

Recently, there have been many new ideas in TOW training, including a recent one in INFANTRY (see "TOW Training Strategy," by Major Anthony DiStephano and Sergeant First Class David L. Boulden, July-August 1988, pages 33-34). None, however, put enough stress on the gunner and the crew, nor do they replicate battlefield conditions realistically. Under the gunnery program outlined herein, a gunner is qualified (has completed Table V) after he has fired a total of 143 missiles, 55 percent of them at stationary targets and 45 percent at moving targets. If the gunner fires only the ITV gunnery tables (III,IV, and V), he will fire 83 missiles for qualification.

The scoring is derived from a matrix that is based on time, as in the Bradley tables. Generally, the time begins when a squad leader starts his fire command and ends when the target is destroyed. The standard of 30 seconds that is used corresponds to Soldier's Manual task #071-316-4053, Engage a Target with an ITV TOW-2 Dual Launcher. More points are awarded for engagements that take less than 30 seconds.

In addition to the time factor that gunners must deal with, multiple target engagements and reloading exercises must be executed while targets are being engaged. The crew and squad qualification tables as well as the advanced gunnery tables are conducted under increased stress and simulated battlefield conditions.

Not every piece of ground offers adequate ranges for realistic TOW engagements, of course, but scaled-down targets can be used in much smaller spaces to achieve the same training objectives. The gunnery conducted by the battalion to date has been partly on a one-seventh scale MILES range. Using the personnel-size Theissen target mechanisms fitted with MILES target interface devices (TIDs), the battalion fabricated armored vehicle silhouettes and placed these on targets. At ranges of 300 to 500 meters, the silhouettes appear as actual vehicles would at distances of 2,500 to 3,500 meters. A BT-37B trolley system permits the use of moving targets on the MILES range. In all, the battalion needs only one square kilometer of ground to conduct its training with Tables I through VI.

Day, night, and NBC firing tasks are integrated into the battalion's gunnery tables. By trial and error, AN/TAS-4A night vision goggles were collimated to the MILES daysight/trackers for the night firing tasks. Sunlight allowed degraded gunnery during the day without thermal heating devices, but cooler night temperatures required some type of heating devices for the target silhouettes.

All of the ITV gunnery tables can be fired with full-size silhouettes or with the scaled-down versions. Tables I through VI are base-line tables and, theoretically, can be fired on any existing small arms range, once the targetry already on the range is fitted with scaled-down targets and the MILES TIDs. The maneuver tables, VII through XII, could be fired on Bradley or tank/CALFEX ranges if they were fitted with the proper targetry.

Because of the cost of live TOW missiles, this program uses the MILES system only, which can realistically duplicate almost every aspect of live firing. ITV gunnery training, however, should culminate in the firing of a service missile on a live fire range. This training should take the form of a proficiency course that combines several maneuver tasks, small arms engagements, and live missile firing. This type of course forces a gunner to fire his missile in a combat scenario rather than in a sterile environment.

This program is not meant to be an answer to all TOW training deficiencies, but it does move ITV training in a new direction. It takes gunners and crews away from the sterile environment of M70 trainers and static firing ranges and puts them in tactical situations under realistic conditions. The program has greatly improved our soldiers' motivation and interest in their training, and it will lead ultimately to an increased killing potential for our antiarmor vehicles.

**Captain Terry M. Henry** recently completed an assignment as commander of Company E, 1st Battalion, 36th Infantry. He is now attending the Infantry Officer Advanced Course. He is a 1982 ROTC graduate of Indiana University of Pennsylvania.